IFW16

RAW SEQUENCE LISTING DATE: 08/26/2004
PATENT APPLICATION: **US/09/723,722B** TIME: 11:14:33

Input Set : **A:\152706441USSEQ3.txt**
Output Set: **N:\CRF4\08262004\I723722B.raw**

```
 4 <110> APPLICANT: Anderson, John P.
 5       Basi, Guriqbal
 6       Doane, Minh Tam
 7       Frigon, Normand
 8       John, Varghese
 9       Power, Michael
10       Sinha, Sukanto
11       Tatsuno, Gwen
12       Tung, Jay
13       Wang, Shuwen
14       McConlogue, Lisa
16 <120> TITLE OF INVENTION: Beta-Secretase Enzyme Compositions and
17       Methods
19 <130> FILE REFERENCE: 228-US-NEWC1
21 <140> CURRENT APPLICATION NUMBER: 09/723,722B
22 <141> CURRENT FILING DATE: 2000-11-28
24 <150> PRIOR APPLICATION NUMBER: US 09/501,708
25 <151> PRIOR FILING DATE: 2000-02-10
27 <150> PRIOR APPLICATION NUMBER: 60/119,571
28 <151> PRIOR FILING DATE: 1999-02-10
30 <150> PRIOR APPLICATION NUMBER: 60/139,172
31 <151> PRIOR FILING DATE: 1999-06-15
33 <160> NUMBER OF SEQ ID NOS: 104
35 <170> SOFTWARE: FastSEQ for Windows Version 4.0
37 <210> SEQ ID NO: 1
38 <211> LENGTH: 1503
39 <212> TYPE: DNA
40 <213> ORGANISM: Homo sapiens
42 <400> SEQUENCE: 1
43 atggcccaag ccctgccctg gctcctgctg tggatgggcg cgggagtgct gcctgcccac      60
44 ggcacccagc acggcatccg gctgcccctg cgcagcggcc tgggggggcgc ccccctgggg     120
45 ctgcggctgc cccgggagac cgacgaagag cccgaggagc ccggccggag gggcagcttt     180
46 gtggagatgg tggacaacct gaggggcaag tcggggcagg gctactacgt ggagatgacc     240
47 gtgggcagcc ccccgcagac gctcaacatc ctggtggata caggcagcag taactttgca     300
48 gtgggtgctg ccccccaccc cttcctgcat cgctactacc agaggcagct gtccagcaca     360
49 taccgggacc tccggaaggg tgtgtatgtg ccctacaccc agggcaagtg ggaaggggag     420
50 ctgggcaccg acctggtaag catcccccat ggccccaacg tcactgtgcg tgccaacatt     480
51 gctgccatca ctgaatcaga caagttcttc atcaacggct ccaactggga aggcatcctg     540
52 gggctggcct atgctgagat tgccaggcct gacgactccc tggagccttt ctttgactct     600
53 ctggtaaagc agacccacgt tcccaacctc ttctccctgc agctttgtgg tgctggcttc     660
54 cccctcaacc agtctgaagt gctggcctct gtcggaggga gcatgatcat tggaggtatc     720
55 gaccactcgc tgtacacagg cagtctctgg tatacaccca tccggcggga gtggtattat     780
56 gaggtgatca ttgtgcgggt ggagatcaat ggacaggatc tgaaaatgga ctgcaaggag     840
```

(pg. 6)

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Input Set : **A:\152706441USSEQ3.txt**
Output Set: **N:\CRF4\08262004\I723722B.raw**

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57 tacaactatg acaagagcat tgtggacagt ggcaccacca accttcgttt gcccaagaaa     900
58 gtgtttgaag ctgcagtcaa atccatcaag gcagcctcct ccacggagaa gttccctgat     960
59 ggtttctggc taggagagca gctggtgtgc tggcaagcag gcaccacccc ttggaacatt    1020
60 ttcccagtca tctcactcta cctaatgggt gaggttacca accagtcctt ccgcatcacc    1080
61 atccttccgc agcaatacct gcggccagtg gaagatgtgg ccacgtccca agacgactgt    1140
62 tacaagtttg ccatctcaca gtcatccacg ggcactgtta tgggagctgt tatcatggag    1200
63 ggcttctacg ttgtctttga tcgggcccga aaacgaattg gctttgctgt cagcgcttgc    1260
64 catgtgcacg atgagttcag gacggcagcg gtggaaggcc cttttgtcac cttggacatg    1320
65 gaagactgtg gctacaacat tccacagaca gatgagtcaa ccctcatgac catagcctat    1380
66 gtcatggctg ccatctgcgc cctcttcatg ctgccactct gcctcatggt gtgtcagtgg    1440
67 cgctgcctcc gctgcctgcg ccagcagcat gatgactttg ctgatgacat ctccctgctg    1500
68 aag                                                                 1503
70 <210> SEQ ID NO: 2
71 <211> LENGTH: 501
72 <212> TYPE: PRT
73 <213> ORGANISM: Homo sapiens
75 <400> SEQUENCE: 2
76 Met Ala Gln Ala Leu Pro Trp Leu Leu Leu Trp Met Gly Ala Gly Val
77  1               5                  10                  15
78 Leu Pro Ala His Gly Thr Gln His Gly Ile Arg Leu Pro Leu Arg Ser
79             20                  25                  30
80 Gly Leu Gly Gly Ala Pro Leu Gly Leu Arg Leu Pro Arg Glu Thr Asp
81         35                  40                  45
82 Glu Glu Pro Glu Glu Pro Gly Arg Arg Gly Ser Phe Val Glu Met Val
83     50                  55                  60
84 Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr
85 65                  70                  75                  80
86 Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser
87                 85                  90                  95
88 Ser Asn Phe Ala Val Gly Ala Ala Pro His Pro Phe Leu His Arg Tyr
89             100                 105                 110
90 Tyr Gln Arg Gln Leu Ser Ser Thr Tyr Arg Asp Leu Arg Lys Gly Val
91         115                 120                 125
92 Tyr Val Pro Tyr Thr Gln Gly Lys Trp Glu Gly Glu Leu Gly Thr Asp
93     130                 135                 140
94 Leu Val Ser Ile Pro His Gly Pro Asn Val Thr Val Arg Ala Asn Ile
95 145                 150                 155                 160
96 Ala Ala Ile Thr Glu Ser Asp Lys Phe Phe Ile Asn Gly Ser Asn Trp
97                 165                 170                 175
98 Glu Gly Ile Leu Gly Leu Ala Tyr Ala Glu Ile Ala Arg Pro Asp Asp
99             180                 185                 190
100 Ser Leu Glu Pro Phe Phe Asp Ser Leu Val Lys Gln Thr His Val Pro
101         195                 200                 205
102 Asn Leu Phe Ser Leu Gln Leu Cys Gly Ala Gly Phe Pro Leu Asn Gln
103     210                 215                 220
104 Ser Glu Val Leu Ala Ser Val Gly Gly Ser Met Ile Ile Gly Gly Ile
105 225                 230                 235                 240
106 Asp His Ser Leu Tyr Thr Gly Ser Leu Trp Tyr Thr Pro Ile Arg Arg
107                 245                 250                 255
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RAW SEQUENCE LISTING DATE: 08/26/2004
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Input Set : **A:\152706441USSEQ3.txt**
Output Set: **N:\CRF4\08262004\I723722B.raw**

```
108 Glu Trp Tyr Tyr Glu Val Ile Ile Val Arg Val Glu Ile Asn Gly Gln
109             260                 265                 270
110 Asp Leu Lys Met Asp Cys Lys Glu Tyr Asn Tyr Asp Lys Ser Ile Val
111         275                 280                 285
112 Asp Ser Gly Thr Thr Asn Leu Arg Leu Pro Lys Lys Val Phe Glu Ala
113     290                 295                 300
114 Ala Val Lys Ser Ile Lys Ala Ala Ser Ser Thr Glu Lys Phe Pro Asp
115 305                 310                 315                 320
116 Gly Phe Trp Leu Gly Glu Gln Leu Val Cys Trp Gln Ala Gly Thr Thr
117                 325                 330                 335
118 Pro Trp Asn Ile Phe Pro Val Ile Ser Leu Tyr Leu Met Gly Glu Val
119             340                 345                 350
120 Thr Asn Gln Ser Phe Arg Ile Thr Ile Leu Pro Gln Gln Tyr Leu Arg
121         355                 360                 365
122 Pro Val Glu Asp Val Ala Thr Ser Gln Asp Asp Cys Tyr Lys Phe Ala
123     370                 375                 380
124 Ile Ser Gln Ser Ser Thr Gly Thr Val Met Gly Ala Val Ile Met Glu
125 385                 390                 395                 400
126 Gly Phe Tyr Val Val Phe Asp Arg Ala Arg Lys Arg Ile Gly Phe Ala
127                 405                 410                 415
128 Val Ser Ala Cys His Val His Asp Glu Phe Arg Thr Ala Ala Val Glu
129             420                 425                 430
130 Gly Pro Phe Val Thr Leu Asp Met Glu Asp Cys Gly Tyr Asn Ile Pro
131         435                 440                 445
132 Gln Thr Asp Glu Ser Thr Leu Met Thr Ile Ala Tyr Val Met Ala Ala
133     450                 455                 460
134 Ile Cys Ala Leu Phe Met Leu Pro Leu Cys Leu Met Val Cys Gln Trp
135 465                 470                 475                 480
136 Arg Cys Leu Arg Cys Leu Arg Gln Gln His Asp Asp Phe Ala Asp Asp
137                 485                 490                 495
138 Ile Ser Leu Leu Lys
139             500
141 <210> SEQ ID NO: 3
142 <211> LENGTH: 24
143 <212> TYPE: DNA
144 <213> ORGANISM: Homo sapiens
146 <400> SEQUENCE: 3
147 gagagacgar garccwgagg agcc                                          24
149 <210> SEQ ID NO: 4
150 <211> LENGTH: 24
151 <212> TYPE: DNA
152 <213> ORGANISM: Artificial Sequence
154 <220> FEATURE:
155 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
156       ID NO: 2
158 <400> SEQUENCE: 4
159 gagagacgar garccwgaag agcc                                          24
161 <210> SEQ ID NO: 5
162 <211> LENGTH: 24
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RAW SEQUENCE LISTING DATE: 08/26/2004
PATENT APPLICATION: **US/09/723,722B** TIME: 11:14:33

Input Set : **A:\152706441USSEQ3.txt**
Output Set: **N:\CRF4\08262004\I723722B.raw**

```
163 <212> TYPE: DNA
164 <213> ORGANISM: Artificial Sequence
166 <220> FEATURE:
167 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
168       ID NO: 2
170 <400> SEQUENCE: 5
171 gagagacgar garccwgaag aacc                                              24
173 <210> SEQ ID NO: 6
174 <211> LENGTH: 24
175 <212> TYPE: DNA
176 <213> ORGANISM: Artificial Sequence
178 <220> FEATURE:
179 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
180       ID NO: 2
182 <400> SEQUENCE: 6
183 gagagacgar garccwgagg aacc                                              24
185 <210> SEQ ID NO: 7
186 <211> LENGTH: 23
187 <212> TYPE: DNA
188 <213> ORGANISM: Artificial Sequence
190 <220> FEATURE:
191 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
192       ID NO: 2
194 <400> SEQUENCE: 7
195 agagacgarg arccsgagga gcc                                               23
197 <210> SEQ ID NO: 8
198 <211> LENGTH: 23
199 <212> TYPE: DNA
200 <213> ORGANISM: Artificial Sequence
202 <220> FEATURE:
203 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
204       ID NO: 2
206 <400> SEQUENCE: 8
207 agagacgarg arccsgaaga gcc                                               23
209 <210> SEQ ID NO: 9
210 <211> LENGTH: 23
211 <212> TYPE: DNA
212 <213> ORGANISM: Artificial Sequence
214 <220> FEATURE:
215 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
216       ID NO: 2
218 <400> SEQUENCE: 9
219 agagacgarg arccsgaaga acc                                               23
221 <210> SEQ ID NO: 10
222 <211> LENGTH: 23
223 <212> TYPE: DNA
224 <213> ORGANISM: Artificial Sequence
226 <220> FEATURE:
227 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
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RAW SEQUENCE LISTING DATE: 08/26/2004
PATENT APPLICATION: **US/09/723,722B** TIME: 11:14:33

Input Set : **A:\152706441USSEQ3.txt**
Output Set: **N:\CRF4\08262004\I723722B.raw**

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228       ID NO: 2
230 <400> SEQUENCE: 10
231 agagacgarg arccsgagga acc                                          23
233 <210> SEQ ID NO: 11
234 <211> LENGTH: 23
235 <212> TYPE: DNA
236 <213> ORGANISM: Artificial Sequence
238 <220> FEATURE:
239 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
240       ID NO: 2
242 <400> SEQUENCE: 11
243 cgtcacagrt trtcaaccat ctc                                          23
245 <210> SEQ ID NO: 12
246 <211> LENGTH: 23
247 <212> TYPE: DNA
248 <213> ORGANISM: Artificial Sequence
250 <220> FEATURE:
251 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
252       ID NO: 2
254 <400> SEQUENCE: 12
255 cgtcacagrt trtctaccat ctc                                          23
257 <210> SEQ ID NO: 13
258 <211> LENGTH: 23
259 <212> TYPE: DNA
260 <213> ORGANISM: Artificial Sequence
262 <220> FEATURE:
263 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
264       ID NO: 2
266 <400> SEQUENCE: 13
267 cgtcacagrt trtccaccat ctc                                          23
269 <210> SEQ ID NO: 14
270 <211> LENGTH: 23
271 <212> TYPE: DNA
272 <213> ORGANISM: Artificial Sequence
274 <220> FEATURE:
275 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
276       ID NO: 2
278 <400> SEQUENCE: 14
279 cgtcacagrt trtcgaccat ctc                                          23
281 <210> SEQ ID NO: 15
282 <211> LENGTH: 23
283 <212> TYPE: DNA
284 <213> ORGANISM: Artificial Sequence
286 <220> FEATURE:
287 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
288       ID NO: 2
290 <400> SEQUENCE: 15
291 cgtcacagrt trtcaaccat ttc                                          23
293 <210> SEQ ID NO: 16
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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 08/26/2004
PATENT APPLICATION: **US/09/723,722B** TIME: 11:14:34

Input Set : **A:\152706441USSEQ3.txt**
Output Set: **N:\CRF4\08262004\I723722B.raw**

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:22; N Pos. 12
Seq#:23; N Pos. 12
Seq#:24; N Pos. 12
Seq#:25; N Pos. 12
Seq#:26; N Pos. 7
Seq#:27; N Pos. 7
Seq#:28; N Pos. 3,12
Seq#:29; N Pos. 3,12
Seq#:34; N Pos. 16
Seq#:35; N Pos. 16
Seq#:36; N Pos. 16
Seq#:37; N Pos. 16
Seq#:48; N Pos. 6164,6238,6254,6255,6256,6257,6258,6259,6260,6261,6262,6263
Seq#:48; N Pos. 6264,6265,6266,6267,6268,6269,6270,6271,6272
Seq#:61; Xaa Pos. 4
Seq#:72; Xaa Pos. 10
Seq#:73; Xaa Pos. 5
Seq#:76; N Pos. 6,18,27,30,33,36,39,42,48,57
Seq#:78; Xaa Pos. 3
Seq#:81; Xaa Pos. 4

VERIFICATION SUMMARY DATE: 08/26/2004
PATENT APPLICATION: **US/09/723,722B** TIME: 11:14:34

Input Set : **A:\152706441USSEQ3.txt**
Output Set: **N:\CRF4\08262004\I723722B.raw**

L:379 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:0
L:395 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0
L:411 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0
L:427 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:0
L:443 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:0
L:459 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0
L:475 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:0
L:491 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29 after pos.:0
L:551 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34 after pos.:0
L:567 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:0
L:583 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0
L:599 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:0
L:960 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48 after pos.:6120
L:961 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48 after pos.:6180
L:962 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48 after pos.:6240
L:1475 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:0
L:1967 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:72 after pos.:0
L:1984 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:73 after pos.:0
L:2112 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:76 after pos.:0
L:2140 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:78 after pos.:0
L:2183 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:81 after pos.:0